

**REMARKS**

Claims 1-21 are currently pending in this application.

**I. Formal Matter.**

Applicant thanks the Examiner for returning the initialled Form PTO-1449 that was appended to the Information Disclosure Statement (IDS) submitted on August 2, 2001. Applicant kindly requests the Examiner to provide initialed Forms PTO/SB/08 submitted with the IDSs filed on July 1, 2004, and March 7, 2005.

**II. 35 U.S.C. §102(b).**

The Examiner rejects claims 1, 2, 5, 6, 9 and 21 under 35 U.S.C. §102(b) as being anticipated by ITU G.983.1 [1998] (<http://crewman.uta.edu/~basu/5347spring2003/PON.pdf>) (*ITU*) under 35 U.S.C. §102(b). Applicant respectfully traverses this rejection in view of the following remarks.

Claim 1. *ITU* discloses protection switching, automatic switching and forced switching (pages 9 and 106-110). *ITU* discloses a switching configuration, wherein switching takes place at the OLT (page 106). Switching at the OLT side of an optical coupler may also affect the transmission of an ONU having satisfactory transmission (Application paragraph [0009]).

In contrast, Applicant claims “a switch controlling means...wherein said switching redirects the transmission of a failing line and does not disturb the transmission to ONUs having

satisfactory transmission” (claim 1). *ITU* fails to disclose the element of “a switch controlling means...wherein said switching redirects the transmission of a failing line and does not disturb the transmission to ONUs having satisfactory transmission.” At least for failing to disclose the element of “a switch controlling means...wherein said switching redirects the transmission of a failing line and does not disturb the transmission to ONUs having satisfactory transmission,” the rejection of claim 1 as being allegedly anticipated by *ITU* under 35 U.S.C. §102(b) should be withdrawn.

In addition, claim 1 is amended to require, “...said control information includes VPI/VCI on a cell header and values of line numbers in a message field of a PLOAM cell...” The subject matter of this amendment is fully supported in the original specification, for example, at paragraph [0047]. *ITU* teaches switching based on the VPI/VCI of the cell header and the OAM of the PLOAM (*ITU* page 9, 106, 110). *ITU* fails to disclose a control information for switching which includes values of line numbers in a message field of a PLOAM. At least for failing to disclose switching based on control information, wherein “control information includes VPI/VCI on a cell header and values of line numbers in a message field of a PLOAM cell”, the alleged anticipation of claim 1 by *ITU* under 35 U.S.C. §102(b) should be withdrawn.

Claim 5. The Examiner asserts that *ITU* discloses selecting of a signal at page 109, section IV.3.2, at page 106, and as “VP/VC switch” in Fig IV.2:(c). *ITU* discloses signal selection and VP/VC switching at the OLT.

In contrast, Applicant claims selecting a signal present on two line termination devices, wherein said two line termination devices are in an ONU (claim 5). *ITU* fails to disclose switching at the ONU. At least for failing to disclose selection of a signal present at two termination devices in an ONU, the rejection of claim 5 as being allegedly anticipated by *ITU* under 35 U.S.C. §102(b) should be withdrawn.

Claim 9. *ITU* discloses, “PON selection trace (PST) messages include K1/K2 bytes...”. Further, a line identifier defines the PST message. (*ITU* page 41). A line identifier is assigned to each transmitter based on the interconnection scheme of the OLT and ONUS, in turn each OLT and each ONU has its own line identifier. The line identifier *is sent to both* the OLT and the ONU, *where the line identifier is checked* for compliance. If the received line number differs from its own line identifier *an alarm is generated*. (*ITU* page 41 section 8.3.5.9).

In contrast, claim 9 requires, loading switch controlling information to K1/K2 byte areas of a PLOAM cell for *a monitor*, wherein switching control information includes values of line numbers, 0/1, *and switching* (a relevant VP or VC) *on the basis of said switch controlling information*. *ITU* teaches that line identifiers are checked at an OLT and an ONU. In turn, an alarm is generated, or an operator is notified, of a mismatch. *ITU* fails to disclose a switching condition of a duplex model, wherein *switching is performed* not only on K1/K2 bytes, but also on a line number (0/1). At least for failing to disclose, “...loading switch controlling information to K1/K2 byte areas of a PLOAM cell for *a monitor*, wherein switching control information includes values of line numbers, 0/1, *and switching* (a relevant VP or VC) *on the basis of said*

*switch controlling information,”* the rejection of claim 9 as being allegedly anticipated by *ITU* under 35 U.S.C. §102(b) should be withdrawn.

Claim 21. The Examiner cites *ITU* at page 107, Type C, and Fig. IV.2 C as allegedly disclosing switching output lines by an optical switch provided at an output to an ONU side of said optical coupler. *ITU* discloses some dual components on the ONU side of the optical coupler; however, a dual switch on the output to the ONU side of the coupler is neither explicitly nor inherently disclosed (*ITU* pages 107 and 109).

In contrast, Applicant claims a switch on the output to the ONU side of the coupler. *ITU* fails to disclose the element of a switch at the output to the ONU side of a coupler. At least for failing to disclose a switch at the output to the ONU side of a coupler, the rejection of claim 21 as being allegedly anticipated by *ITU* under 35 U.S.C. §102(b) should be withdrawn.

Claims 2 and 6 are asserted as being allowable at least by virtue of their dependency upon an allowable claim.

### **III. 35 U.S.C. §103(a).**

The Examiner rejects claims 3, 4, 7, 8 and 10-20 under 35 U.S.C. §103(a) as allegedly being unpatentable over *ITU* (<http://crewman.uta.edu/~basu/5347spring2003/PON.pdf>) in view of *Kumozaki et al.*, U.S. Patent No. 5,539,564 (“*Kumozaki*”). Applicant respectfully traverses this rejection in view of the following remarks.

Claim 3. *Kumozaki* discloses an OLT (100) receiving a warning signal, then issues a command to an ONU (300) to switch to the reserve line (col. 10, lines 47-49; col. 9, lines 53-55). Additionally, at col. 10, lines 38-41, *Kumozaki* discloses switching at the ONU after confirming that the OLT has not performed the switching. Rather, *Kumozaki* discloses a preset lapse period before switching at the ONU (col. 10, lines 41-46). Alternatively, *Kumozaki* discloses an OLT receiving a failure signal and subsequently issuing the command/signal to switch at the ONU.

In contrast, Applicant claims an OLT which loads “switch confirmation requirement” into a cell header and “switch requirement” into a cell header (claim 3). *Kumozaki* fails to teach or suggest an OLT which loads “switch confirmation requirement” into a signal header, where *Kumozaki* only discloses receipt of a warning signal at the OLT or detection of a signal cutoff (col. 10, lines 34-36 and 54-56). At least for failing to teach or suggest the element of an OLT that loads “switch confirmation requirement” into a cell header either alone or in combination, the alleged obviousness rejection of claim 3 over *ITU* in view of *Kumozaki* under 35 U.S.C. §103(a) should be withdrawn.

Claim 8 contains an element analogous to that identified in the traversal of claim 3, above. Accordingly, the arguments presented for the allowability of claim 3 are asserted for the allowability of claim 8.

At least for failing to teach or suggest the element of an OLT which loads SC into unused K1 or K2 byte of a message area, individually or in combination, the alleged obviousness

rejection of claim 8 over *ITU* in view of *Kumozaki* under 35 U.S.C. §103(a) should be withdrawn.

Claim 14. The Examiner relies on *ITU* to provide the element of broadcasting a frame containing a PLOAM cell to all ONUs connected downstream (FOA page 8). *ITU* discloses protection switching activated by specific messages in PLOAM cells (*ITU* page 41).

In contrast, Applicant claims "...broadcasting a frame containing a PLOAM cell which loads said switch controlling information to all of the ONUs connected downstream..." Neither *ITU* nor *Kumozaki*, individually or in combination, teaches or discloses broadcasting a frame containing a PLOAM cell to all ONUs connected downstream. At least for failing to teach or suggest the element of broadcasting a frame containing a PLOAM cell that loads said switch controlling information to all of the ONUs connected downstream, the alleged obviousness rejection of claim 8 over *ITU* in view of *Kumozaki* under 35 U.S.C. §103(a) should be withdrawn.

Claims 17 and 18. The Examiner relies on *Kumozaki* to provide the element of deciding necessity of switching at the ONU (FOA page 9). *Kumozaki* teaches that the decision to switch at the ONU is made at the OLT (*Kumozaki* col. 10, lines 47-63). Further, in the Detailed Action on claim 19, the Examiner acknowledges that a switch at a PLT in an ONU is not made if in the absence of a switching instruction from the OLT (FOA page 9). *Kumozaki* neither teaches nor

suggests making the decision to switch at the ONU, where *Kumozaki* teaches making the decision to switch at the OLT.

In contrast, Applicant claims localized switching decisions, wherein deciding the necessity of switching is made at an ONU, then switching confirmation reply signals are transmitted to the OLT. *ITU* and *Kumozaki*, neither individually nor in combination, teach or suggest the element of deciding the necessity of switching at the ONU. At least for failing to teach or suggest the element of deciding the necessity of switching at the ONU, the alleged obviousness rejection of claims 17 and 18 over *ITU* in view of *Kumozaki* under 35 U.S.C. §103(a) should be withdrawn.

Claim 15 contains an element analogous to that of claims 17 and 18, making the decision to switch within the ONU; accordingly, the remarks above traversing the rejections of claims 17 and 18 are hereby asserted for claim 15, and withdrawal of the rejection of claim 15 as being allegedly obvious over *ITU* in view of *Kumozaki* under 35 U.S.C. §103(a) is asserted to be in order.

Dependent claims 4, 7, 10-13, 16, 19 and 20 are asserted to be in condition for allowance at least for depending from an allowable independent claim.

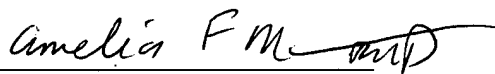
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ART UNIT 2633  
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In view of the preceding amendments and remarks, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby earnestly solicited. If any points remain in issue that the Examiner feels may be best resolved through a personal or telephonic interview, he is kindly requested to contact the undersigned at the local telephone number listed below.

The USPTO is directed and authorized to charge all required fees (except the Issue/Publication Fees) to our Deposit Account No. 19-4880. Please also credit any over-payments to said Deposit Account.

Respectfully submitted,

  
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